



# SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, European Union CLP EC 1272/2008 and the Global Harmonization Standard

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

**PRODUCT IDENTIFIER/TRADE/MATERIAL NAME: ASACOL<sup>®</sup> HD (Mesalamine) TABLET, DELAYED RELEASE**  
Containing 400 and 800 mg Mesalamine

**DESCRIPTION:** Mesalamine Tablets

**PRODUCT USE:** Human Pharmaceutical

**USES ADVISED AGAINST:** Non-Pharmaceutical Use

**CHEMICAL NAME:** For Active Ingredient: 5-Amino-2-Hydroxybenzoic Acid

**CHEMICAL FAMILY:** For Active Ingredient: Salicylate

**HOW SUPPLIED:** 400 and 800 mg Mesalamine Tablets

**OTHER DESIGNATIONS:** NDC:005915644-18; NDC:0430-0783-95; NDC:0430-0783-27; NDC:0430-0752-27

**FORMULA:** For Active Ingredient: C<sub>7</sub>H<sub>7</sub>NO<sub>3</sub>

## SUPPLIER OF THE SAFETY DATA SHEET

**RESPONSIBLE PARTY U.S.:**

**Allergan**

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NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], EU Directives through EC 1907: 2006, and European Union CLP EC 1272/2008, required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

**DATE OF PREPARATION:** October 13, 2015

**DATE OF REVISION:** November 29, 2013

## 2. HAZARDS IDENTIFICATION

**EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION:** According to Article 1, item 5 (a) of CLP Regulation (EC) 1272/2008, medicinal products in the finished state for human use, as defined in 2001/83/EC, are excepted from classification and other criteria of 1272/2008.

**EU 67/548/EEC LABELING AND CLASSIFICATION:** According to Article 1 of European Union Council Directive 92/32/EEC, medical products in the finished state for human use (as defined by European Union Council Directives 67/548/EEC and 87/21/EEC) are not subject to the regulations and administrative provisions of European Union Council Directive 92/32/EEC.

### EMERGENCY OVERVIEW:

**Product Description:** This product is supplied as yellow-brown capsule-shaped tablets.

**Health Hazards:** In the workplace, exposure via inhalation or eye contact may cause irritation. No information is available on possible effects from skin exposure. Accidental ingestion may be harmful. In therapeutic use, the most common adverse effects reported include headache, nausea, nasopharyngitis, abdominal pain, and worsening of ulcerative colitis. Other adverse effects reported have included renal damage and hypersensitivity reactions, including cardiac hypersensitivity reactions. May cause fetal harm, based on animal data for Dibutyl Phthalate (inactive ingredient in Asacol HD enteric coating). Other adverse effects seen from therapeutic use are described in Section 11 (Toxicological information).

**Flammability Hazards:** If heated to high temperatures for a prolonged period, the product may ignite. When involved in a fire, this material may decompose and produce irritating vapors and toxic compounds (including carbon, iron, sodium, magnesium, and nitrogen oxides).

**Reactivity Hazards:** This product is not reactive.

**Environmental Hazards:** The Dibutyl Phthalate ingredient is acutely toxic to aquatic organisms. Large quantities of this product released to the aquatic and terrestrial environment may have an adverse effect.

**Emergency Considerations:** Emergency responders should wear appropriate protection for the situation to which they respond.

### 3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	EINECS #	% w/w	LABEL ELEMENTS EU Classification (67/548/EEC) GHS & EU Classification (1272/2008 EC) Risk Phrases/Hazard Statements/Symbol
ACTIVE INGREDIENTS:				
Mesalamine 5-Amino-2-Hydroxybenzoic Acid	89-57-6	201-919-1	Proprietary	SELF-CLASSIFICATION <u>EU 67/548</u> Classification: Harmful, Irritant Risk Phrase Codes: R22, R36/37/39 Hazard Symbols: Xn/Xi <u>GHS and EU 1272/2008</u> Classification: Acute Oral Toxicity Cat. 4, Skin Irritation Cat. 2, Eye Irritation Cat. 2A, STOT (Inhalation-Respiratory Irritation) Cat. 3 Hazard Codes: H302, H315, H319, H335 Hazard Symbol/Pictogram: GHS07
EXCIPIENTS:				
Colloidal Silicon Dioxide	112945-52-5	Not Listed	Proprietary	<u>EU (67/548/EEC)</u> : No Classification Applicable <u>EU/GHS 1272/2008</u> : No Classification Applicable
Dibutyl Phthalate	84-74-2	201-557-4	Proprietary	<u>EU 67/548</u> Classification: Reproductive Toxicity Cat. 2, Dangerous for the Environment Risk Phrase Codes: R61, R62, R50 Hazard Symbols: T, N <u>GHS and EU 1272/2008</u> Classification: Reproductive Toxicity Cat. 1B, Aquatic Acute Toxicity Cat. 1 Hazard Codes: H360Df, H400 Hazard Symbol/Pictogram: GHS08, GHS09
Edible Black Ink	Mixture	Mixture	Proprietary	<u>EU (67/548/EEC)</u> : No Classification Applicable <u>EU/GHS 1272/2008</u> : No Classification Applicable
Ferric Oxide Red	1309-37-1	215-168-2	Proprietary	<u>EU (67/548/EEC)</u> : No Classification Applicable <u>EU/GHS 1272/2008</u> : No Classification Applicable
Ferric Oxide Yellow	20344-49-4	243-746-4	Proprietary	<u>EU (67/548/EEC)</u> : No Classification Applicable <u>EU/GHS 1272/2008</u> : No Classification Applicable
Lactose Monohydrate	64044-51-1	200-559-2	Proprietary	<u>EU (67/548/EEC)</u> : No Classification Applicable <u>EU/GHS 1272/2008</u> : No Classification Applicable
Magnesium Stearate	557-04-0	209-150-3	Proprietary	<u>EU (67/548/EEC)</u> : No Classification Applicable <u>EU/GHS 1272/2008</u> : No Classification Applicable
Methacrylic Acid Copolymer Type A	33434-24-1	Not Listed	Proprietary	<u>EU (67/548/EEC)</u> : No Classification Applicable <u>EU/GHS 1272/2008</u> : No Classification Applicable
Methacrylic Acid Copolymer Type B	25086-15-1	Not Listed	Proprietary	<u>EU (67/548/EEC)</u> : No Classification Applicable <u>EU/GHS 1272/2008</u> : No Classification Applicable
Polyethylene Glycol	25322-68-3	NLP # 500-038-2	Proprietary	<u>EU (67/548/EEC)</u> : No Classification Applicable <u>EU/GHS 1272/2008</u> : No Classification Applicable
Povidone	9003-39-8	Not Listed	Proprietary	<u>EU (67/548/EEC)</u> : No Classification Applicable <u>EU/GHS 1272/2008</u> : No Classification Applicable
Sodium Starch Glycolate	9063-38-1	Not Listed	Proprietary	<u>EU (67/548/EEC)</u> : No Classification Applicable <u>EU/GHS 1272/2008</u> : No Classification Applicable
Talc	14807-96-6	238-877-9	Proprietary	<u>EU (67/548/EEC)</u> : No Classification Applicable <u>EU/GHS 1272/2008</u> : No Classification Applicable

See Section 16 for full classification information of product and components.

### 4 FIRST-AID MEASURES

**PROTECTION OF FIRST AID RESPONDERS:** First-aid responders should not attempt to treat victims of exposure to this material without adequate personal protective equipment. Rescuers should be taken for medical attention, if necessary.

**DESCRIPTION OF FIRST AID MEASURES:** Victim(s) must be taken for medical attention. Remove victim(s) to fresh air, as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, when necessary. Take copy of label and SDS to physician or other health professional with victim(s).

**Inhalation:** If dusts or particulates from this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect occurs after removal to fresh air.

**Skin Exposure:** If the product contaminates the skin and adverse effect occurs, begin decontamination with running water. Minimum flushing is for 20 minutes. Do not interrupt flushing. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Seek medical attention if adverse effect occurs after flushing.

**Eye Exposure:** If particulates from this product enter the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 20 minutes. Do not interrupt flushing. Seek immediate medical attention after flushing if adverse effect occurs.

**Ingestion Exposure:** If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Rinse mouth with water immediately. Victim should drink large quantities of water. If milk is available, victim should drink it after drinking water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow.

**IMPORTANT SYMPTOMS AND EFFECTS:** See Sections 2 (Hazard Identification) and 11 (Toxicological Information).

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** In therapeutic use, pre-existing liver disease, renal impairment, upper gastrointestinal obstruction or cardio conditions such as myocarditis and pericarditis may be aggravated.

## 4 FIRST-AID MEASURES (Continued)

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE (continued):** Workplace exposure may also aggravate these conditions. Persons who may have hypersensitivity reactions to salicylates or aminosaliclates or other disorders described in Section 11 (Toxicological Information) may experience aggravation upon exposure.

**IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:** Treat symptoms and eliminate exposure. Persons developing hypersensitivity reactions should receive immediate medical attention. There is no specific antidote for Mesalamine treatment should be symptomatic and supportive. This may include prevention of further gastrointestinal tract absorption, correction of fluid electrolyte imbalance, and maintenance of adequate renal function. Asacol HD is a pH dependent delayed-release product and this factor should be considered when treating a suspected overdose.

## 5. FIRE-FIGHTING MEASURES

**FLASH POINT:** Not established.

**AUTOIGNITION TEMPERATURE:** Not established.

**FLAMMABLE LIMITS & METHOD OF DETERMINATION (in air by volume, %):** Not determined.

**FIRE EXTINGUISHING MEDIA:** Use extinguishing media appropriate for surrounding fire.

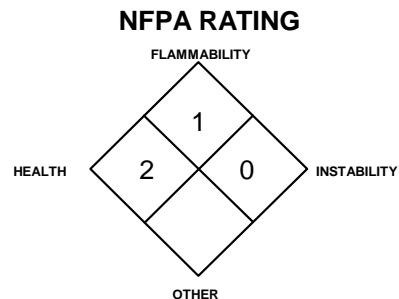
**UNSUITABLE EXTINGUISHING MEDIA:** None known.

**SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:** This product may ignite if highly heated for a prolonged period of time. When involved in a fire, the products of thermal decomposition may include irritating fumes and toxic gases (e.g., carbon, iron, sodium, silicon, magnesium, and nitrogen oxides).

**Explosion Sensitivity to Mechanical Impact:** Not sensitive.

**Explosion Sensitivity to Static Discharge:** Not sensitive.

**SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS:** Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Contaminated protective equipment should be thoroughly washed with running water prior to removal of SCBA respiratory protection. Firefighters whose protective equipment becomes contaminated should thoroughly shower with warm, soapy water and should receive medical evaluation if they experience any adverse effects.



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate  
3 = Serious 4 = Severe

## 6. ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS:** In the event of a spill, clear the area and protect people.

### PROTECTIVE EQUIPMENT:

**Small Spills:** For incidental spills (e.g., 1 vial of tablets), wear double latex or nitrile disposable gloves and eye protection.

**Large Spills:** For large spills (e.g., a pallet of vials), protective apparel should be used with a respirator when there is any danger of airborne dusts being generated. Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit.

### METHODS FOR CLEANUP AND CONTAINMENT:

**Small Spills:** Pick-up or sweep-up spilled tablets.

**Large Spills:** Trained personnel following pre-planned procedures should handle non-incident releases. Access to the spill areas should be restricted. Sweep up spilled product carefully, avoiding the generation of airborne dusts.

**All Spills:** Decontaminate the area of the spill thoroughly using detergent and water. Place all spill residue in an appropriate container and seal. Move to a secure area. Do not mix with wastes from other materials. If necessary, discard contaminated response equipment or rinse with soapy water before returning such equipment to service. Dispose of in accordance with applicable international, national, state, and local procedures (see Section 13, Disposal Considerations).

**ENVIRONMENTAL PRECAUTIONS:** Prevent material from entering sewer or confined spaces, waterways, soil or public waters. Do not flush to sewer. For spills on water, contain, minimize dispersion and collect.

## 7. HANDLING and USE

**PRECAUTIONS FOR SAFE HANDLING:** Employees must be trained to properly use this compound. Particular care in working with this material must be practiced in pharmacies and other preparation areas, during manufacture of pharmaceutical preparations, and during patient administration. Use of this compound should be performed in a designated area for working with narcotic compounds. As with all chemicals, avoid getting this product ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics in work areas where this product is handled or stored. Wash thoroughly after handling this product or equipment and containers of this product. Follow SPECIFIC USE INSTRUCTIONS supplied with this product. Use of this product should be performed in a designated area for working with drugs. Particular care in working with this product must be practiced in pharmacies and other preparation areas, during manufacture of this product, and during patient administration. If necessary, work areas must be regularly cleaned and decontaminated.

**PRODUCT PREPARATION INSTRUCTIONS FOR MEDICAL PERSONNEL:** Handle this material following standard medical practices and following the recommendations presented on the Package Insert.

**CONDITIONS FOR SAFE STORAGE:** Containers of this product must be properly labeled. Store this product in original container. Store at 20°C to 25°C (68°F to 77°F). (See USP Controlled Room Temperature.) Inspect bottles containing this product for leaks or damage. Store away from incompatible materials (see Section 10, Stability and Reactivity).

## 7. HANDLING and USE (Continued)

**SPECIFIC END USE(S):** This product human pharmaceutical. Follow all industry standards for use of this product.

## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

### EXPOSURE LIMITS/CONTROL PARAMETERS:

**Ventilation and Engineering Controls:** Use with adequate ventilation. Follow standard medical product handling procedures. During decontamination of work surfaces, workers should wear the same equipment recommended in Section 6 (Accidental Release Measures) of this SDS.

### Occupational/Workplace Exposure Limits/Guidelines:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	IDLH mg/m <sup>3</sup>	mg/m <sup>3</sup>
Mesalamine	89-57-6	NE	NE	NE	NE	NE	NE	NE	OEL for freebase: 800 µg/m <sup>3</sup>
Colloidal Silicon Dioxide	112945-52-5	NE	NE	NE	NE	NE	NE	NE	Carcinogen: IARC-3
Dibutyl Phthalate	84-74-2	5	NE	5	NE	5	NE	4000	DFG MAKs: TWA = 0.05 PEAK = 2•MAK 15 min. average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C Carcinogen: EPA-D, MAK-4
Edible Ink	Mixture	NE	NE	NE	NE	NE	NE	NE	NE
Ferric Oxide Red Ferric Oxide Yellow Exposure limits given are for CAS# 1309-37-1 (Fe <sub>2</sub> O <sub>3</sub> )	1332-37-2 20344-49-4	5 (resp. fract.)	NE	10 (fume)	NE	5 (dusts & fume, as Fe)	NE	2500 (dust & fume, as Fe)	Carcinogen: IARC-3, MAK-3B, TLV-A4
Lactose Monohydrate	64044-51-5	NE	NE	NE	NE	NE	NE	NE	NE
Magnesium Stearate	557-04-0	10	NE	NE	NE	NE	NE	NE	Carcinogen: TLV-A4
Methacrylic Acid Copolymer Type A	33434-24-1	NE	NE	NE	NE	NE	NE	NE	NE
Methacrylic Acid Copolymer Type B	25086-15-1	NE	NE	NE	NE	NE	NE	NE	NE
Polyethylene Glycol	25322-68-3	NE	NE	NE	NE	NE	NE	NE	DFG MAKs: TWA = 1000 (inhalable fraction); due to possible mist formation, exposure should be minimized. PEAK = 8•MAK 15 min. average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C AIHA WEEL TWA = 10
Povidone	9003-39-8	NE	NE	NE	NE	NE	NE	NE	Carcinogen: IARC-3
Sodium Starch Glycolate	9063-38-1	NE	NE	NE	NE	NE	NE	NE	NE
Talc	14807-96-6	2 (resp. fract.)	NE	20 mppcf (containing < 1% quartz)	NE	2 (respirable dust) and < 1% quartz	NE	NE	Carcinogen: IARC-3, MAK-3B (respirable fraction), TLV-A4

NE = Not Established.

**International Occupational Exposure Limits:** In addition to the exposure limit values cited in this section, other exposure limits have been established by various countries for the components of this product. The exposure limits given may not be the most current; individual country authorities should be contacted to check on more current limits.

#### MESALAMINE:

Russia: TWA = 0.5 mg/m<sup>3</sup>, STEL = 1.5 mg/m<sup>3</sup>, JUN 2003

#### COLLOIDAL SILICON DIOXIDE:

Australia: TWA = 2 mg/m<sup>3</sup> (respirable dust), JUL 2008

United Kingdom: TWA = 6 mg/m<sup>3</sup> (inhal. dust), OCT 2007

United Kingdom: TWA = 2.4 mg/m<sup>3</sup> (resp. dust), OCT 2007

#### DIBUTYL PHTHALATE:

Australia: TWA = 5 mg/m<sup>3</sup>, JUL 2008

Austria: MAK-TMW = 5 mg/m<sup>3</sup>, 2007

Belgium: TWA = 5 mg/m<sup>3</sup>, MAR 2002

Denmark: TWA = 3 mg/m<sup>3</sup>, MAY 2011

France: VME = 5 mg/m<sup>3</sup>, FEB 2006

India: TWA = 5 mg/m<sup>3</sup>, JAN 1993

Iceland: TWA = 3 mg/m<sup>3</sup>, NOV 2011

Japan: OEL = 5 mg/m<sup>3</sup>, sen, MAY 2009

Korea: TWA = 5 mg/m<sup>3</sup>, 2006

Mexico: TWA = 5 mg/m<sup>3</sup>, STEL = 10 mg/m<sup>3</sup>, 2004

New Zealand: TWA = 5 mg/m<sup>3</sup>, JAN 2002

Norway: TWA = 3 mg/m<sup>3</sup>, JAN 1999

Peru: TWA = 5 mg/m<sup>3</sup>, JUL 2005

The Philippines: TWA = 5 mg/m<sup>3</sup>, JAN 1993

Poland: MAC(TWA) = 5 mg/m<sup>3</sup>, MAC(STEL) = 10 mg/m<sup>3</sup>, JAN 1999

#### DIBUTYL PHTHALATE (continued):

Russia: TWA = 0.5 mg/m<sup>3</sup>, STEL = 1.5 mg/m<sup>3</sup>, JUN 2003

Sweden: TWA = 3 mg/m<sup>3</sup>, STEL = 5 mg/m<sup>3</sup>, JUN 2005

Switzerland: MAK-W = 5 mg/m<sup>3</sup>, DEC 2006

United Kingdom: TWA = 5 mg/m<sup>3</sup>, STEL = 10 mg/m<sup>3</sup>, OCT 2007

In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

#### IRON OXIDES:

ARAB Republic of Egypt: TWA = 3 ppm (5 mg/m<sup>3</sup>) (fume), JAN 1993

Australia: TWA = 0.1 mg(Fe)/m<sup>3</sup>, JUL 2008

Australia: TWA = 5 mg(Fe)/m<sup>3</sup> (fume), JUL 2008

Belgium: TWA = 2 ppm (5 mg(Fe)/m<sup>3</sup>) (fume), MAR 2002

Denmark: TWA = 3.5 mg(Fe)/m<sup>3</sup>, OCT 2002

Finland: TWA = 5 mg(Fe)/m<sup>3</sup>, fume, SEP 2009

France: VME = 5 mg(Fe)/m<sup>3</sup>, FEB 2006

Germany: MAK = 1.5 mg(Fe)/m<sup>3</sup> (respirable), 2005

Hungary: TWA = 6 mg/m<sup>3</sup> (resp), SEP 2000

Japan: OEL = 1 mg/m<sup>3</sup> (respirable), 4 mg/m<sup>3</sup> (total), APR 2007

Korea: TWA = 10 mg/m<sup>3</sup>, 2006

Korea: TWA = 5 mg/m<sup>3</sup>, 2006

Mexico: TWA = 10 mg/m<sup>3</sup>, STEL = 20 mg/m<sup>3</sup>, 2004

#### IRON OXIDES (continued):

The Netherlands: MAC-TGG = 5 mg(Fe)/m<sup>3</sup>, 2003

The Netherlands: MAC-TGG = 10 mg/m<sup>3</sup>, 2003

New Zealand: TWA = 5 mg(Fe)/m<sup>3</sup> (dust and fume), JAN 2002

New Zealand: TWA = 10 mg/m<sup>3</sup> (inspirable dust), JAN 2002

Norway: TWA = 3 mg/m<sup>3</sup>, JAN 1999

The Philippines: TWA = 10 mg/m<sup>3</sup> (fume), JAN 1993

Poland: MAC(TWA) fume = 5 mg/m<sup>3</sup>, MAC(STEL) = 10 mg/m<sup>3</sup>, JAN 1999

Russia: TWA = 6 mg/m<sup>3</sup>, JUN 2003

Sweden: TWA = 3.5 mg(Fe)/m<sup>3</sup> (resp. dust), JUN 2005

Switzerland: MAK-W = 3 mg/m<sup>3</sup>, DEC 2006

Thailand: TWA = 10 mg/m<sup>3</sup> (fume), JAN 1993

Turkey: TWA = 10 mg/m<sup>3</sup> (fume), JAN 1993

United Kingdom: TWA = 4 mg/m<sup>3</sup> (respirable), 2005

United Kingdom: TWA = 10 mg/m<sup>3</sup> (inhalable), 2005

United Kingdom: TWA = 5 mg(Fe)/m<sup>3</sup>; STEL = 10 mg(Fe)/m<sup>3</sup>, 2005

In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

#### MAGNESIUM STEARATE:

New Zealand: TWA = 10 mg/m<sup>3</sup> (inspirable dust), JAN 2002

## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

### EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

#### International Occupational Exposure Limits (continued):

##### MAGNESIUM STEARATE (continued):

Sweden: TWA = 5 mg/m<sup>3</sup>, JUN 2005  
Belgium: TWA = 10 mg/m<sup>3</sup>, MAR 2002

##### POLYETHYLENE GLYCOL:

The Netherlands: MAC-TGG = 1000 mg/m<sup>3</sup>, 2003  
Russia: STEL = 10 mg/m<sup>3</sup>, JUN 2003  
Denmark: TWA = 1000 mg/m<sup>3</sup>, OCT 2002  
Germany: MAK = 1000 mg/m<sup>3</sup> (inhalable), 2005

##### TALC:

Australia: TWA = 2.5 mg/m<sup>3</sup>, JUL 2008  
Austria: MAK-TMW = 2 mg/m<sup>3</sup>, resp, 2007

##### TALC (continued):

Belgium: TWA = 2 mg/m<sup>3</sup>, MAR 2002  
Denmark: TWA = 0.3 f/cc, carc, MAY 2011  
Finland: TWA = 0.5 mg/m<sup>3</sup>, NOV 2011  
Finland: TWA = 5 mg/m<sup>3</sup>, granulated, SEP 2009  
Iceland: TWA = 0.3 f/cc, NOV 2011  
Japan: OEL = 0.5 mg/m<sup>3</sup> (resp. dust), 2 mg/m<sup>3</sup> (total dust), MAY 2009  
Korea: TWA = 2 mg/m<sup>3</sup>, 2006  
Mexico: TWA = 2 mg/m<sup>3</sup> (respirable), 2004  
The Netherlands: MAC-TGG = 1 mg/m<sup>3</sup>, 2003

##### TALC (continued):

New Zealand: TWA = 2 mg/m<sup>3</sup> (respirable dust), JAN 2002  
Peru: TWA = 2 mg/m<sup>3</sup>, JUL 2005  
Sweden: TWA = 2 mg/cm<sup>3</sup> (total dust); TWA = 1 mg/cm<sup>3</sup> (resp. dust), JUN 2005  
Switzerland: MAK-W = 2 mg/m<sup>3</sup>, DEC 2006  
United Kingdom: TWA = 1 mg/m<sup>3</sup> (resp. dust), OCT 2007  
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

**PERSONAL PROTECTIVE EQUIPMENT:** Use of personal protective equipment must be in compliance with U.S. OSHA 29 CFR Subpart I (beginning at 1910.132), Canadian CSA Standards Z94.4-02 and Z94.3-02, EU EN 529:2005, CEN/TR 15419:2006, and CR 13464:1999. Please reference applicable regulations and standards for relevant details.

**Respiratory Protection:** Respiratory protection is generally not needed during routine conditions of use of this product. If respiratory protection is needed, use only respiratory protection authorized under appropriate regional regulations.

**Eye Protection:** No eye protection is normally needed during medical administration of this product. During operations in which dusts of the product may be generated, splash goggles or safety glasses should be considered.

**Hand Protection:** During medical administration of this product, medical latex or nitrile gloves should be worn to avoid absorption of the product. During manufacture or other similar industrial operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS.

**Body Protection:** Use appropriate protective clothing for the task (e.g., lab coat, etc.)

## 9. PHYSICAL and CHEMICAL PROPERTIES

The following information is for the product.

**FORM:** Capsule-shaped tablets.

**ODOR:** Odorless.

**HOW TO DETECT THIS SUBSTANCE (identification properties):** The appearance of this product is a distinguishing characteristic.

The following values are available for the active ingredient, Mesalamine:

**FORM:** Crystalline solid.

**MOLECULAR FORMULA:** C<sub>7</sub>H<sub>7</sub>NO<sub>8</sub>

**ODOR:** Slight.

**BOILING POINT @ 760 mmHg:** 1250.6°C (2283.1°F) [predict.]

**VAPOR PRESSURE (air = 1) @ 25°C:** 0.0 mmHg [predict.]

**EVAPORATION RATE (nBuAc = 1):** Not applicable.

**FLASH POINT:** 560°C (1040°F)

**SOLUBILITY IN WATER @ 25°C:** Slightly soluble.

**OTHER SOLUBILITIES:** Slightly soluble in alcohol; more soluble in hot water; soluble in hydrochloric acid, insoluble in ethanol.

**COLOR:** Red-brown.

**ODOR THRESHOLD:** Not applicable.

**COLOR:** White.

**MOLECULAR WEIGHT:** 153.1

**ODOR THRESHOLD:** Not available.

**MELTING POINT:** 280-283°C (536-541°F)

**SPECIFIC GRAVITY (water = 1):** Not available.

**pH:** 4.0-5.0

**DECOMPOSITION TEMPERATURE:** ~280°C (~536°F)

**COEFFICIENT WATER/OIL DISTRIBUTION:** Log Kow: 0.98

## 10. STABILITY and REACTIVITY

**CHEMICAL STABILITY:** This product is not reactive.

**DECOMPOSITION PRODUCTS:** *Combustion:* If exposed to extremely high temperatures, the products of thermal decomposition may include irritating fumes and toxic gases (e.g. carbon, iron, magnesium, silicon, sodium, and nitrogen oxides and hydrogen chloride). *Hydrolysis:* None known.

**MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:** This product is generally compatible with other common materials in a medical facility. Acids, acid chlorides, acid anhydrides, chloroformates, strong oxidizing agents, and other chemicals that could affect its performance should be avoided.

**POSSIBILITY HAZARDOUS REACTION/POLYMERIZATION:** Will not occur.

**CONDITIONS TO AVOID:** Avoid heat, light, and contact with incompatible chemicals.

## 11. TOXICOLOGICAL INFORMATION

**SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE:** The health hazard information provided below is pertinent to medical employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

**Inhalation:** Inhalation of airborne dusts generated from the drug may slightly irritate the nose, throat, and lungs. Inhalation of large amounts may also cause under 'Other Potential Health Effects'.

**Contact with Skin or Eyes:** Acute skin contact is not expected to cause adverse effect. Prolonged or repeated skin contact may cause dermatitis (dry, red skin). Contact with the eyes of airborne dusts generated by damaged tablets of this product may cause mild to moderate irritation, redness, and tearing.

**Skin Absorption:** No information known.

**Ingestion:** Ingestion is not a significant route of occupational overexposure. Acute ingestion of large quantities of this product caused by poor hygiene practices may be harmful. Symptoms of prolonged or repeated ingestion, as may occur when poor industrial hygiene is practiced, may include those described for 'Other Potential Health Effects'.

**Injection:** Injection is not a likely route of exposure for the form of this product.

## 11. TOXICOLOGICAL INFORMATION (Continued)

**OTHER POTENTIAL HEALTH EFFECTS-Therapeutic Doses:** In therapeutic use, the most common adverse effects reported include headache, nausea, nasopharyngitis, abdominal pain, and worsening of ulcerative colitis. Other adverse effects reported have included renal damage and hypersensitivity reactions, including cardiac hypersensitivity reactions. May cause fetal harm, based on animal data for Dibutyl Phthalate (inactive ingredient in Asacol HD enteric coating). In therapeutic use the following additional adverse effects described by body system have included:

- **Blood System:** Anemia, low levels of white blood cells, platelets and eosinophils, swollen lymph nodes. Rare: Agranulocytosis (rare), aplastic anemia (rare),
- **Body as a Whole:** Fever, lack or loss of strength and energy, weakness, chills, taste perversion, infection, malaise, pain, neck pain, chest pain, back pain, lupus-like syndrome, drug fever (rare).
- **Cardiovascular System:** Rare: Pericarditis and myocarditis.
- **Central Nervous System:** Headache, anxiety, depression, somnolence, insomnia, nervousness, confusion, dizziness, vertigo, tremor, sensation of tickling, tingling, burning, pricking, or numbness, hypersensitivity of touch. Rare: peripheral neuropathy.
- **Ears:** Ear pain, tinnitus, ear congestion, ear disorder.
- **Eyes:** Conjunctivitis, eye pain, blurred vision, vision abnormality.
- **Gastrointestinal System:** Nausea, abdominal pain, abdominal enlargement, ulcerative colitis, diarrhea, upset stomach, vomiting, flatulence, dry mouth, stomatitis, oral ulcers, anorexia, increased appetite, eructation, pancreatitis, gallstones, gastritis, gastroenteritis, gastrointestinal bleeding, perforated peptic ulcer (rare), constipation, hemorrhoids, rectal hemorrhage, bloody diarrhea, tenesmus (a continuing feeling of need to pass stools), stool abnormality.
- **Hypersensitivity Reactions:** Facial edema, edema, peripheral edema, and reactions as described under 'Sensitization to the Product'.
- **Liver:** Rare reports of hepatotoxicity, including jaundice, cholestatic jaundice, hepatitis, and possible hepatocellular damage including liver necrosis and liver failure (sometimes fatal). Asymptomatic elevations of liver enzymes which usually resolve during continued use or with discontinuation of the drug have also been reported. One case of Kawasaki-like syndrome, that included changes in liver enzymes.
- **Metabolic System:** Elevated AST (SGOT) or ALT (SGPT), elevated alkaline phosphatase, elevated GGT, elevated LDH, elevated bilirubin, elevated serum creatinine and BUN.
- **Musculoskeletal System:** Gout, rheumatoid arthritis, arthritis, joint and muscle pain, joint disorder, excessive tone of the skeletal muscles; increased resistance of muscle to passive stretching.
- **Neurological/Psychiatric:** Emotional lability, d, Guillain-Barré syndrome (rare), and transverse myelitis (rare).
- **Renal/Urogenital System:** Renal failure (rare), interstitial nephritis, minimal change nephropathy, painful urination, urinary frequency and urgency, blood in the urine.
- **Reproductive System:** Possible harm to fetus. Testicular pain, decreased libido, abnormally painful cramps, menorrhagia abnormal menstrual bleeding.
- **Respiratory System:** Nasopharyngitis, influenza, cough, sinusitis, running nose, pharyngitis, asthma exacerbation, inflammation of lining of lungs, bronchitis, eosinophilic pneumonia, interstitial pneumonitis.
- **Skin:** Hair loss, acne, dry skin, sweating, itching, hives, rash. Rare: psoriasis, pyoderma gangrenosum (skin condition causing tissue to become necrotic, leading to deep ulcers that usually occur on the legs).

**HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms.** Exposure to this product may cause the following health effects:

**Acute:** Accidental ingestion may be harmful. Eye contact with dusts may cause mechanical irritation. Inhalation of dusts from product may also cause effects described under 'Other Potential Health Effects'.

**Chronic:** Potential harm to the fetus and adverse effects on fertility. Repeated workplace exposure to the skin contact may cause dermatitis (dry, red skin). Chronic therapeutic use or workplace exposure may cause effects described under 'Other Potential Health Effects'.

**TARGET ORGANS:** **Acute:** *Industrial Exposure:* Skin, eyes, respiratory system (dusts from product). **Therapeutic Doses:** Reproductive system. **Chronic:** *Industrial Exposure:* Skin. **Therapeutic Doses:** Body systems as given under 'Other Potential Health Effects'.

**IRRITANCY OF PRODUCT:** Dusts from this product may irritate contaminated tissue.

**SENSITIZATION TO THE PRODUCT:** In therapeutic use, persons who have experienced a hypersensitivity reaction to sulfasalazine may have a similar reaction to Asacol HD tablets or to other compounds that contain or are converted to Mesalamine. Mesalamine-induced cardiac hypersensitivity reactions (myocarditis and pericarditis) have been reported with Asacol HD and other Mesalamine medications. Persons with conditions predisposing them to the development of myocarditis or pericarditis may experience cardio-hypersensitivity reactions.



**TOXICITY DATA:** Currently the following toxicity data are available for the active component. Data for excipients are also available but are not presented in this SDS. Contact Allergan for more information.

**MESALAMINE:**

TDLo (Oral-Woman) 8760 mg/kg/1 year-intermittent: Behavioral: anorexia (human), muscle weakness; Kidney/Ureter/Bladder: changes in tubules (including acute renal failure, acute tubular necrosis)  
 TDLo (Oral-Woman) 5400 mg/kg/90 days-intermittent: Gastrointestinal: changes in structure or function of endocrine pancreas  
 TDLo (Oral-Woman) 5400 mg/kg/90 days-intermittent: Gastrointestinal: changes in structure or function of endocrine pancreas

**MESALAMINE (continued):**

TDLo (Oral-Woman) 80 mg/kg/1 days-intermittent: Cardiac: pulse rate; Vascular: BP lowering not characterized in autonomic section  
 TDLo (Oral-Woman) 21,800 mg/kg/39 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis, focal (pneumoconiosis), respiratory depression; Blood: eosinophilia  
 TDLo (Oral-Woman) 8 mg/kg: Behavioral: headache; Gastrointestinal: hypermotility, diarrhea; Nutritional and Gross Metabolic: body temperature increase

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
<b>HEALTH HAZARD</b>	(BLUE)		2*
<b>FLAMMABILITY HAZARD</b>	(RED)		1
<b>PHYSICAL HAZARD</b>	(YELLOW)		0
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate  
 3 = Serious 4 = Severe \* = Chronic hazard

## 11. TOXICOLOGICAL INFORMATION (Continued)

### TOXICITY DATA (continued):

#### MESALAMINE (continued):

TDLo (Oral-Man) 321 mg/kg/15 days-intermittent: Skin and Appendages: photosensitivity (after systemic exposure)  
TDLo (Oral-Man) 6857 mg/kg/17 weeks-intermittent: Gastrointestinal: nausea or vomiting; Liver: jaundice, cholestatic  
TDLo (Oral-Man) 51 mg/kg/5 days-intermittent: Gastrointestinal: hypermotility, diarrhea; Skin and Appendages: dermatitis, other (after systemic exposure); Nutritional and Gross Metabolic: body temperature increase  
TDLo (Oral-Man) 2057 mg/kg/17 weeks-intermittent: Blood: agranulocytosis; Nutritional and Gross Metabolic: body temperature increase  
TDLo (Oral-Man) 6.86 mg/kg/16 weeks-intermittent: Gastrointestinal: nausea or vomiting; Liver: jaundice (or hyperbilirubinemia) hepatocellular; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: multiple enzyme effects  
TDLo (Oral-Man) 503 mg/kg/26 weeks-intermittent: Gastrointestinal: other changes; Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: multiple enzyme effects  
TDLo (Oral-Child) 20 mg/kg: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol)  
TDLo (Unreported-Child) 400 mg/kg/10 days-continuous: Gastrointestinal: nausea or vomiting; Skin and Appendages: dermatitis, allergic (after systemic exposure); Nutritional and Gross Metabolic: body temperature increase

#### MESALAMINE (continued):

LD<sub>50</sub> (Oral-Rat) 2800 mg/kg: Behavioral: somnolence (general depressed activity), food intake (animal); Gastrointestinal: other changes  
LD<sub>50</sub> (Oral-Mouse) 3370 mg/kg  
LD<sub>50</sub> (Skin-Rabbit) > 5 gm/kg  
LD<sub>50</sub> (Intraperitoneal-Rat) 100 mg/kg: Behavioral: analgesia  
LD<sub>50</sub> (Intraperitoneal-Rat) 1 gm/kg: Behavioral: convulsions or effect on seizure threshold; Kidney/Ureter/Bladder: other changes in urine composition; Skin and Appendages: hair  
LD<sub>50</sub> (Intraperitoneal-Mouse) 469 mg/kg  
LDLo (Oral-Monkey) 3 gm/kg: Sense Organs and Special Senses (Eye): ptosis; Behavioral: somnolence (general depressed activity); Kidney/Ureter/Bladder: hematuria  
TDLo (Oral-Rat) 36,400 mg/kg/13 weeks-intermittent: Kidney/Ureter/Bladder: urine volume increased, changes in bladder weight; Blood: normocytic anemia  
TDLo (Oral-Mouse) 525 mg/kg/7 days-intermittent: Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation  
TDLo (Rectal-Rat) 840 mg/kg/1 weeks-intermittent: Gastrointestinal: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: other oxidoreductases, Metabolism (Intermediary): effect on inflammation or mediation of inflammation  
TDLo (Rectal-Rat) 2100 mg/kg/3 weeks-intermittent: Gastrointestinal: other changes

**OTHER ANIMAL DATA:** In animal studies (rats, mice, dogs), the kidney was the principal organ for toxicity. (In the following, comparisons of animal dosing to recommended human dosing are based on body surface area and a 4.8 g/day dose for a 50 kg person). Mesalamine causes renal papillary necrosis in rats at single doses of approximately 750 mg/kg to 1000 mg/kg (1.3 to 1.7 times the recommended human dose). Doses of 170 and 360 mg/kg/day (about 0.3 and 0.6 times the recommended human dose) given to rats for six months produced papillary necrosis, papillary edema, tubular degeneration, tubular mineralization, and urothelial hyperplasia. In mice, oral doses of 4000 mg/kg/day (approximately 3.4 times the recommended human dose) for three months produced tubular nephrosis, multifocal/diffuse tubulo-interstitial inflammation, and multifocal/diffuse papillary necrosis. In dogs, single doses of 6000 mg (approximately 6.25 times the recommended human dose) of delayed-release Mesalamine tablets resulted in renal papillary necrosis but were not fatal. Renal changes have occurred in dogs given chronic administration of Mesalamine at doses of 80 mg/kg/day (0.5 times the recommended human dose). Single oral doses of 5000 mg/kg Mesalamine suspension in mice (approximately 4.2 times the recommended human dose of Asacol HD based on body surface area), 4595 mg/kg in rats (approximately 7.8 times the recommended human dose of Asacol HD based on body surface area) and 3000 mg/kg in cynomolgus monkeys (approximately 10 times the recommended human dose of Asacol HD based on body surface area) were lethal.

**CARCINOGENIC POTENTIAL OF COMPONENTS:** Dietary Mesalamine was not carcinogenic in rats at doses as high as 480 mg/kg/day, or in mice at 2000 mg/kg/day. These doses are approximately 0.8 and 1.7 times the 4.8 g/day Asacol HD dose (based on body surface area). This material is not listed by agencies tracking the carcinogenic potential of chemical compounds. Some excipient ingredients are listed as follows:

**DIBUTYL PHTHALATE:** EPA-D (Not Classifiable as to Human Carcinogenicity); MAK-4 (Substances with Carcinogenic Potential for which Genotoxicity plays no or at most a minor role. No significant cancer risk is expected, provided the MAK value is observed).

**IRON OXIDES (based on CAS# 1309-37-1):** ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Unclassifiable as to Carcinogenicity in Humans); MAK-3B [respirable fraction] (Substances for Which in vitro tests or animal studies have yielded evidence of carcinogenic effects that is not sufficient for classification of the substance in one of the other categories.)

**COLLOIDAL SILICON DIOXIDE, POVIDONE:** IARC-3 (Unclassifiable as to Carcinogenicity in Humans)

**TALC:** ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Unclassifiable as to Carcinogenicity in Humans); MAK-3B [respirable fraction]: (Substances Which Cause Concern that They Could Be Carcinogenic for Man but Cannot Be Assessed Conclusively Because of Lack of Data. Substances for which in vitro tests or animal studies have yielded evidence of carcinogenic effects that is not sufficient for classification of the substance in one of the other categories.)

The remaining components of this product are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

**REPRODUCTIVE TOXICITY INFORMATION:** There are no adequate and well-controlled studies of Mesalamine in pregnant women; however, this product may pose potential for fetal harm when administered to a pregnant woman due to the presence of Dibutyl Phthalate. In the workplace, the risk to the fetus should be communicated and the appropriate action should be taken to prevent exposure in accordance with company policy and regulatory requirements. This product is rated by the FDA for therapeutic risk as Pregnancy Risk Category C (Animal reproduction studies have shown an adverse effect on the fetus and there are no adequate and well-controlled studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks).

**Mutagenicity:** Mesalamine was not genotoxic in the Ames test, the Chinese hamster ovary cell chromosomal aberration assay, and the mouse micronucleus test.

#### **Embryotoxicity/Teratogenicity:**

*Human Information:* Mesalamine crosses the placenta. In prospective and retrospective studies of over 600 women exposed to Mesalamine during pregnancy, the observed rate of congenital malformations was not increased above the background rate in the general population. Some data show an increased rate of preterm birth, stillbirth, and low birth weight, but it is unclear whether this was due to underlying maternal disease, drug exposure, or both, as active inflammatory bowel disease is also associated with adverse pregnancy outcomes.

*Animal Information:* No evidence of fetal harm was observed in animal reproduction studies of Mesalamine in rats and rabbits at oral doses approximately 1.6 times (rat) and 3.2 times (rabbit) the recommended human dose. However, Dibutyl Phthalate (DBP) is an inactive ingredient in Asacol HD's enteric coating, and in animal studies in rats at doses higher than 80 times the human dose, maternal DBP was associated with external and skeletal malformations and adverse effects on the male reproductive system. The human daily intake of DBP from the maximum recommended dose of Asacol HD tablets is about 48 mg.

## 11. TOXICOLOGICAL INFORMATION (Continued)

### REPRODUCTIVE TOXICITY INFORMATION (continued):

#### Embryotoxicity/Teratogenicity (continued):

**Animal Information (continued):** Published reports in rats show that male rat offspring exposed in utero to DBP (greater than or equal to 100 mg/kg/day, approximately 17 times the human dose based on body surface area), display reproductive system aberrations compatible with disruption of androgenic dependent development. The clinical significance of this finding in rats is unknown. At higher dosages (greater than or equal to 500 mg/kg/day, approximately 84 times the human dose based on body surface area), additional effects, including cryptorchidism, hypospadias, atrophy or agenesis of sex accessory organs, testicular injury, reduced daily sperm production, permanent retention of nipples, and decreased anogenital distance are noted. Female offspring are unaffected. High doses of DBP, administered to pregnant rats was associated with increased incidences of developmental abnormalities, such as cleft palate (greater than or equal to 630 mg/kg/day, about 106 times the human dose, based on body surface area) and skeletal abnormalities (greater than or equal to 750 mg/kg/day, about 127 times the human dose based on body surface area) in the offspring.

**Reproductive Toxicity:** Mesalamine, at oral doses up to 480 mg/kg/day (about 0.8 times the recommended human treatment dose based on body surface area), was found to have no effect on fertility or reproductive performance of male and female rats. Mesalamine and its N-acetyl metabolite are present in human milk. In published lactation studies, maternal Mesalamine doses from various oral and rectal formulations and products ranged from 500 mg to 3 g daily. The concentration of Mesalamine in milk ranged from non-detectable to 0.11 mg/L. The concentration of the N-acetyl-5-aminosalicylic acid metabolite ranged from 5 to 18.1 mg/L. Based on these concentrations, estimated infant daily doses for an exclusively breastfed infant are 0 to 0.017 mg/kg/day of Mesalamine and 0.75 to 2.72 mg/kg/day of N-acetyl-5-aminosalicylic acid. Dibutyl phthalate (DBP), an inactive ingredient in the enteric coating of Asacol HD tablets, and its primary metabolite mono-butyl phthalate (MBP) are excreted into human milk. The clinical significance of this has not been determined. Because many drugs are excreted in human milk, and because of the potential for serious adverse reactions in nursing infants, nursing mothers should be advised of these effects and the appropriate action should be taken to prevent exposure.

**ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs):** Currently, ACGIH Biological Exposure Indices (BEIs) have not been determined for the components of this product.

## 12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

**MOBILITY:** This product has not been tested for mobility in soil. The following information is available for some ingredients.

**DIBUTYL PHTHALATE:** A log Koc value of 3.14 was determined from measurements on soil samples from Broome County, NY. An experimental log Koc of 3.05 was determined from unsaturated soil columns. Dibutyl Phthalate had measured log Koc values of 3.05-3.06 in Typic Haplaquept type loamy, sandy soil. A mean sediment log Koc value of 3.8 was calculated from the mean Dibutyl Phthalate concentration in water and suspended particulate matter from Lake Yssel, The Netherlands. According to a classification scheme, these Koc values suggest that Dibutyl Phthalate is expected to have low to no mobility in soil.

**MESALAMINE:** Using a structure estimation method based on molecular connectivity indices, the Koc of Mesalamine can be estimated to be 10. According to a classification scheme, this estimated Koc value suggests that Mesalamine is expected to have very high mobility in soil. A predicted Kd value of 1.37 calculated for sludge samples in the UK, suggests that adsorption to sludge is low. Estimated pKa values of 2.09, 5.26 and 13.64 indicate that this compound will dissociate to the zwitterion form in the environment.

**PERSISTENCE AND BIODEGRADABILITY:** This product has not been tested for persistence or biodegradability. It is expected that the components will slowly degrade in the environment and form a variety of organic and inorganic materials; however, no specific information is known. The following information is available for some ingredients.

**DIBUTYL PHTHALATE:** If released to air, a vapor pressure of  $2.01 \times 10^{-5}$  mm Hg at 25°C indicates Dibutyl Phthalate will exist in both the vapor and particulate phases. Vapor-phase Dibutyl Phthalate will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 42 days. Particulate-phase Dibutyl Phthalate will be removed from the atmosphere by wet or dry deposition. Dibutyl phthalate does contain chromophores that absorb at wavelengths >290 nm and therefore may be susceptible to direct photolysis by sunlight. If released to soil, Dibutyl Phthalate is expected to have low mobility based upon log Koc values of 3.05-3.14. Volatilization from moist soil surfaces is expected to be an important fate process based upon a Henry's Law constant of  $1.81 \times 10^{-6}$  atm-cu m/mole. In Davidson clay loam and Lakeland sand, 98 and 66% loss occurred in 26 weeks, respectively as a result of biodegradation. Carboxyl-labeled (14)C Dibutyl Phthalate studied in soil incubation experiments conducted under laboratory conditions had a lag phase of 10-20 days, approximately 90% of Dibutyl Phthalate added to soils at rates of 0.1-0.4% was decomposed within 80 days under aerobic and anaerobic conditions. If released into water, Dibutyl Phthalate is expected to adsorb to suspended solids and sediment based upon the Koc values. In natural waters, the biodegradation half-life of Dibutyl Phthalate is estimated as 1 day and anaerobic biodegradation half-life of 2 days. Dibutyl phthalate had an average aerobic and anaerobic biodegradation half-lives of 2.9 and 14.4 days, respectively, calculated in 6 river sediment samples taken from Taiwan rivers. Volatilization from water surfaces is expected to be an important fate process based upon this compound's Henry's Law constant. Dibutyl phthalate was found to have a hydrolysis degradation half-life of 22 years at pH 7 and 25°C.

**MESALAMINE:** If released to air, an estimated vapor pressure of  $6.1 \times 10^{-8}$  mm Hg at 25°C indicates Mesalamine will exist in both the vapor and particulate phases in the atmosphere. Vapor-phase Mesalamine will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 18 hrs. Particulate-phase Mesalamine will be removed from the atmosphere by wet or dry deposition. Mesalamine does contain chromophores that absorb at wavelengths > 290 nm and therefore may be expected to be susceptible to direct photolysis by sunlight. If released to soil, Mesalamine is expected to have very high mobility based upon an estimated Koc of 10. Estimated pKa values of 2.09, 5.26 and 13.64 indicate that this compound will dissociate to the zwitterion form in the environment. Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of  $5.0 \times 10^{-12}$  atm-cu m/mole. Mesalamine is considered completely biodegradable under anaerobic conditions as was indicated by 95.6% methane production following acclimation. If released into water, Mesalamine is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's estimated Henry's Law constant. An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low. Hydrolysis is not expected to be an important environmental fate process since this compound lacks functional groups that hydrolyze under environmental conditions.

**BIO-ACCUMULATION POTENTIAL:** This product has not been tested for bio-accumulation potential. The following information is available for some ingredients.

**MESALAMINE:** An estimated BCF of 3 was calculated in fish for Mesalamine, using an estimated log Kow of 0.98 and a regression-derived equation. According to a classification scheme, this BCF suggests the potential for bioconcentration in aquatic organisms is low.

**ECOTOXICITY:** This product may be harmful to aquatic and terrestrial organisms; all releases to terrestrial, atmospheric and aquatic environments should be avoided. The following aquatic toxicity data are available for the Dibutyl Phthalate component, which is acutely toxic to marine organisms. Only select data are presented in this SDS; contact Allergan for more information.

#### DIBUTYL PHTHALATE:

EC<sub>50</sub> (*Pseudokirchneriella subcapitata* Green algae) 96 hours = 400 µg/L  
EC<sub>50</sub> (*Pimephales promelas* Fathead minnow, age 32 days, mean length 19.0 mm, mean weight 0.101 g) 96 hours = 0.85-1.1 mg/L  
EC<sub>50</sub> (*Daphnia magna* Water flea) 24 hours = 17,000 µg/L  
EC<sub>50</sub> (*Tetrahymena pyriformis* Protozoan) 24 hours = 2200 µg/L

#### DIBUTYL PHTHALATE (continued):

LC<sub>50</sub> (*Artemia salina* Brine shrimp) 96 hours = 8 mg/L, seawater  
LC<sub>50</sub> (*Palaemonetes pugio* Brine shrimp) 96 hours = 30 mg/L  
LC<sub>50</sub> (*Mysidopsis bahia* Mysid shrimp) 96 hours = 0.75 mg/L, static  
LC<sub>50</sub> (*Brachydanio rerio* Zebrafish) 96 hours = 2.2 mg/L, semi static  
LC<sub>50</sub> (*Pimephales promelas* Fathead minnow, weight 1.1 g) 96 hours = 920-3950 µg/L



## 12. ECOLOGICAL INFORMATION (Continued)

### ECOTOXICITY (continued):

#### DIBUTYL PHTHALATE (continued):

LC<sub>50</sub> (*Oncorhynchus mykiss* Rainbow trout) 96 hours = > 1240-6470 µg/L

LC<sub>50</sub> (*Ictalurus punctatus* Channel catfish) 96 hours = 460-2910 µg/L

LC<sub>50</sub> (*Lepomis macrochirus* Bluegill) 96 hours = 480-2100 µg/L

#### DIBUTYL PHTHALATE (continued):

LC<sub>50</sub> (*Lepomis macrochirus* Bluegill, weight 1.4 g) 96 hours = 730 µg/L

LC<sub>50</sub> (*Leuciscus idus* Orfe) 96 hours = 7.3 mg/L, static

LC<sub>50</sub> (*Cyprinodon variegatus* Sheepshead minnow) 96 hours = 600 µg/L, flow-through

**OTHER ADVERSE EFFECTS:** This product does not contain any component with known ozone depletion potential.

**RESULTS OF PBT AND vPvB ASSESSMENT:** No Data Available. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

**ENVIRONMENTAL EXPOSURE CONTROLS:** Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

## 13. DISPOSAL CONSIDERATIONS

**WASTE TREATMENT/DISPOSAL METHODS:** Waste disposal must be in accordance with appropriate Federal, State, and local regulations.

**PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING:** Wear proper protective equipment when handling waste materials.

**U.S. EPA WASTE NUMBER:** Not applicable to wastes consisting only of this product.

**EUROPEAN WASTE CODES:** Wastes from Human or Animal Health Care or Related Research: 18 01 08: Medicines Other Than Those Mentioned in 18 01 07.

## 14. TRANSPORTATION INFORMATION

**U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS:** This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

**TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:** This product is not classified as Dangerous Goods, per regulations of Transport Canada.

**INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):** This product is not classified as Dangerous Goods, by rules of IATA.

**INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:** This product is not classified as Dangerous Goods by the International Maritime Organization.

**EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):** This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

**TRANSPORT IN BULK ACCORDING TO THE IBC CODE:** Not applicable.

**ENVIRONMENTAL HAZARDS:** This product does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and not component is specifically listed in Annex III under MARPOL 73/78.

## 15. REGULATORY INFORMATION

### UNITED STATES REGULATIONS:

**U.S. SARA Reporting Requirements:** The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act as follows.

COMPOUND	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Dibutyl Phthalate	No	No	Yes

**U.S. SARA Threshold Planning Quantity (TPQ):** There are no specific Threshold Planning Quantities for any component of this product. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) therefore applies, per 40 CFR 370.20.

**U.S. CERCLA Reportable Quantities (RQ):** Dibutyl Phthalate = 10 lb (5 kg).

**U.S. TSCA Inventory Status:** This product is regulated under Food and Drug Administration standards; it is not subject to requirements under TSCA.

**Other U.S. Federal Regulations:** Regulations of the FDA under the Federal Food, Drug and Cosmetic Act are applicable when this material is used in pharmaceutical preparations. Under the Hazard Communication Standard (HCS), Section (b)(5)(ii) drugs are subject to labeling requirements by the FDA under the Federal Food, Drug and Cosmetic Act and are exempt from labeling provisions of the HCS; this section of the HCS exempts only labeling requirements and not requirements for a Safety Data Sheet for drugs.

**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65):** The Dibutyl Phthalate component of this product is on the California Proposition 65 Lists. WARNING! This product contains a compound known to the State of California to cause developmental harm (male and female).

### CANADIAN REGULATIONS:

**Canadian DSL Inventory Status:** This product regulated by the Therapeutic Products Programme (TPP) of Health Canada and so it is exempted from requirements of the DSL/NDL Inventory.

**Canadian Environmental Protection Act (CEPA) Priorities Substances Lists:** The Dibutyl Phthalate component of this product is on the CEPA Priorities Substances Lists, as follows: PSL1 Substances not considered as "TOXIC" under Section 64 of CEPA 1999.

**Canadian WHMIS Classification and Symbol:** The WHMIS Requirements of the Hazardous Products Act does not apply in respect of the advertising, sale or importation of any cosmetic, device, drug or food within the meaning of the Food and Drugs Act.

## 15. REGULATORY INFORMATION (Continued)

### EUROPEAN REGULATIONS:

**Safety, Health, and Environmental Regulations/Legislation Specific for the Product:** When formulated in a finished medicinal product for human use, this material is subject to Directive 2001/83/EC and subsequent amendments to the directive.

**Chemical Safety Assessment:** No Data Available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

## 16. OTHER INFORMATION

**ANSI LABELING (Based on 129.1, Provided to Summarize Occupational Exposure Hazards):** **WARNING!** MAY BE HARMFUL IF ACCIDENTALLY INGESTED. MAY CAUSE EYE, AND SKIN IRRITATION. MAY CAUSE HARM TO FETUS DURING PREGNANCY. MAY CAUSE HYPERSENSITIVITY REACTIONS, IN SUSCEPTIBLE INDIVIDUALS. COMBUSTIBLE IF EXPOSED TO HIGH TEMPERATURES. CONTAINS A COMPOUND THAT IS ACUTELY TOXIC TO AQUATIC ORGANISMS. Do not take internally without prescription. Avoid unnecessary contact with skin, eyes, and clothing. Wash thoroughly after handling. Wear gloves, goggles, and appropriate body protection during handling or administration. **FIRST-AID:** In case of contact, flush skin or eyes with plenty of water. If adverse respiratory reaction occurs, give oxygen and seek immediate medical attention. If ingested, DO NOT induce vomiting—seek immediate medical attention. **IN CASE OF FIRE:** Use water fog, dry chemical, CO<sub>2</sub>, or “alcohol” foam. **IN CASE OF SPILL:** Pick up or sweep up spilled product. Place residual in appropriate container and seal. Dispose of according to applicable regulations. Consult Data Sheet for additional information.

**GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION:** According to Article 1, item 5 (a) of CLP Regulation (EC) 1272/2008, medicinal products in the finished state for human use, as defined in 2001/83/EC, are exempted from classification and other criteria of 1272/2008.

**EU LABELING AND CLASSIFICATION 67/548/EEC:** According to Article 1 of European Union Council Directive 92/32/EEC, medical products in the finished state for human use (as defined by European Union Council Directives 67/548/EEC and 87/21/EEC) are not subject to the regulations and administrative provisions of European Union Council Directive 92/32/EEC.

### CLASSIFICATION OF COMPONENTS:

#### CLP Regulation (EC) 1272/2008

**Mesalamine:** This is a self-classification:

Classification: Skin Irritation Category 2, Eye Irritation Category 2A, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Single Exposure Category 3

Hazard Statements: H315: Causes skin irritation. H319: Causes serious eye irritation. H335: May cause respiratory irritation.

**Dibutyl Phthalate:** This is a published classification:

Classification: Reproductive Toxicity Category 1B, Aquatic Acute Toxicity Category 1

Hazard Statements: H360Df: May damage the unborn child. Suspected of damaging fertility. H400: Very toxic to aquatic life.

**All Other Components:** An official classification for these substances has not been published nor is applicable.

#### 67/548/EEC:

**Mesalamine:** This is a self-classification:

Classification: Harmful, Irritant

Risk Phrases: R22: May be harmful if swallowed. R36/37/38: Irritating to eyes, respiratory system and skin.

**Dibutyl Phthalate:** This is a published classification:

Classification: Reproductive Toxicity Category 2

Risk Phrases: R61: May cause harm to the unborn child. R62: Possible risk of impaired fertility. R50: Very toxic to aquatic organisms.

**All Other Components:** An official classification for these substances has not been published nor is applicable.

**REFERENCES AND DATA SOURCES:** Contact the supplier for information.

**METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION:** Bridging principles were used to classify this product.

**REVISION DETAILS:** New.

This Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of Allergan knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this product is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

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